

BOOK REPORTS

The Book Reports section is a regular feature of *Computers & Mathematics with Applications*. It is an unconventional section. The Editors decided to break with the longstanding custom of publishing either lengthy and discursive reviews of a few books, or just a brief listing of titles. Instead, we decided to publish every important material detail concerning those books submitted to us by publishers, which we judge to be of potential interest to our readers. Hence, breaking with custom, we also publish a complete table of contents for each such book, but no review of it as such. We welcome our readers' comments concerning this enterprise. Publishers should submit books intended for review to the Editor-in-Chief,

Professor Ervin Y. Rodin
Box 1040
Washington University
St Louis
MO 63130, U.S.A.

Software Engineering in C. By Peter A. Darnell and Philip E. Margolis. Springer, New York (1988). 612 pages. \$29.55.

Contents:

1. Introduction to programming
2. Essentials
3. Scalar data types
4. Control flow
5. Operators and expressions
6. Arrays and pointers
7. Storage classes
8. Structures and unions
9. Functions
10. The C preprocessor
11. Input and output
12. Software engineering
13. Appendix A the ANSI runtime Library
14. Appendix B syntax of ANSI C
15. Appendix C implementation limits
16. Appendix D differences between the ANSI and K and R standards
17. Appendix E reserved names
18. Appendix F C interpreter listing
19. Appendix G ASCII codes

A Course in Constructive Algebra. By Ray Mines, Fred Richman and Wim Ruitenburg. Springer, New York (1988). 344 pages \$32.00.

Contents:

1. Sets
2. Basic algebra
3. Rings and modules
4. Divisibility in discrete domains
5. Principal ideal domains
6. Field theory
7. Factoring polynomials
8. Commutative noetherian rings
9. Finite dimensional algebras
10. Free groups
11. Abelian groups
12. Valuation theory
13. Dedekind domains

Statistics with Vague Data. By Rudolf Kruse and Klaus Dieter Meyer. Reidel, Dordrecht, Holland (1987). 279 pages. \$59.00.

Contents:

1. Introduction
2. Vague data
3. Fuzzy sets of the real line
4. Operations on fuzzy sets
5. Representation of vague data in a digital computer
6. Topological properties of fuzzy set spaces
7. Random sets and fuzzy random variables
8. Descriptive statistics with vague data
9. Distribution functions and i.i.d.-sequences of random variables
10. Limit theorems
11. Some aspects of statistical inference
12. On a software tool for statistics with vague data

Advances in Multivariate Statistical Analysis. Edited by A. K. Gupta. Reidel, Dordrecht, Holland (1987). 389 pages. \$89.00.

This volume is dedicated to the memory of Professor K. C. S. Pillai in recognition of his contributions to multivariate statistical analysis. It brings together contributions from 21 eminent statisticians working in multivariate statistical analysis.

Principles of Database Systems. By Jeffrey D. Ullman. Computer Science Press (1982). 484 pages. \$37.95.

Contents:

1. Introduction to database system concepts
2. Physical data organization
3. The network model and the DBTG proposal
4. The hierarchical model
5. The relational model
6. Relational query languages
7. Design theory for relational databases
8. Query optimization
9. The universal relation as a user interface
10. Protecting the database against misuse
11. Concurrent operations on the database
12. Distributed database systems

Logics of Time and Computation. By Robert Goldbatt. Center for the Study of Language and Information (1987). 130 pages. \$29.95 in cloth, \$14.50 in paperback.

Contents:

1. Propositional modal logic
2. Some temporal and computational logics
3. First-order dynamic logic

Spectral Theory and Differential Operators. By D. E. Edmunds and W. D. Evans. Clarendon Press, Oxford (1987). 574 pages. \$115.00.

Contents:

1. Linear operators in Banach spaces
2. Entropy numbers, s -numbers, and eigenvalues
3. Unbounded linear operators
4. Sesquilinear forms in Hilbert spaces
5. Sobolev spaces
6. Generalized Dirichlet and Neumann boundary-value problems
7. Second-order differential operators on arbitrary open sets
8. Capacity and compactness criteria
9. Essential spectra
10. Essential spectra of general second-order differential operators
11. Global and asymptotic estimates for the eigenvalues of $-\Delta + q$ when q is real
12. Estimates for the singular values of $-\Delta + q$ when q is complex